

## ADDITIONS TO THE NATIVE AND ADVENTIVE FLORA OF NEW MEXICO

Robert Sivinski

New Mexico Forestry and Resources Conservation Division, P.O. Box 1948,  
Santa Fe, New Mexico 87504 U.S.A.

Timothy Lowrey

UNM Herbarium, Department of Biology, University of New Mexico,  
Albuquerque, New Mexico 87131 U.S.A.

Roger Peterson

New Mexico Natural History Institute, P.O. Box 9314, Santa Fe, New Mexico  
87504 U.S.A.

### ABSTRACT

Sixteen new records of angiosperms are added to the New Mexico flora. Eight are native species and eight are adventive.

KEY WORDS: Flora, New Mexico

Botanical field surveys and herbarium searches by the authors have resulted in the following sixteen new records for the native and adventive flora of New Mexico. Several new angiosperm records for New Mexico have been recently published for the southern part of the state (Spellenberg *et al.* 1993). The report presented here is a more general accumulation of New Mexico records and has been produced to assist in preparing distribution maps for the remaining volumes of the *Flora of North America*. Nomenclature follows references cited.

## AMARANTHACEAE

*Amaranthus crassipes* Schlecht. Chaves Co.: Bitter Lake National Wildlife Refuge (Salt Creek Wilderness), T8S, R25E, sect. 25, occasional in depressions in *Sporobolus airoides* grassland, elev. 1100 m, 30 October 1983, Peterson 83-486 (UNM). Otero Co.: Upper Dog Canyon, T24S, R20E, section 25, sprawling on sand among matted *Bouteloua barbata*, elev. 1600 m, 23 October 1984, Peterson 84-642 (UNM).

Comment: A native of tropical America that has become naturalized at eastern seaports. It was previously noted as far west as Trans-Pecos Texas (Correll & Johnston 1970).

## APOCYNACEAE

*Amsonia jonesii* Woods. San Juan Co.: 12.2 road-kilometers east of Newcomb, west of confluence of Hunter's Wash and Chaco River on Pictured Cliff Sandstone, T24N, R16E, elev. 1670 m, 26 August 1961 (fruiting), Cannon s.n. (UNM); same location, 9 May 1962 (flowering), Cannon s.n. (UNM).

Comment: These collections represent a minor southern and eastern range extension from the adjacent states of Arizona, Colorado, and Utah.

## ASTERACEAE

*Matricaria matricarioides* (Less.) Porter. Sandoval Co.: Jemez Mts., Capulin Canyon, Forest Road 501 on gravel roadway and adjacent road reclamation, T18N, R5E, sect. 22, elev. 2270 m, 5 June 1991, Peterson 91-168 (UNM).

Comment: Martin & Hutchins (1981) included this species in *A Flora of New Mexico*, but with no certain records. This collection documents its residence in the state. It was observed again at the same location in 1993 and was spreading away from the gravel road. The reclamation of adjacent road disturbance occurred in 1989.

*Onopordum acanthium* L. San Miguel Co.: Pecos National Historical Park, 2.5 km south of Pecos on Hwy 63, T15N, R12E, sections 4, 5, 8, 9. and 16, in piñon-juniper woodland, common and well established on disturbed areas, elev. 2080 m, 30 July 1993, Sivinski 2476 (UNM); same location, 3 July 1994, Sivinski 2766 (NMC).

Comment: This European thistle is rapidly spreading throughout the western states. It is well established in disturbed areas on the highway, farms, and ranching operations near Pecos.

*Scorzonera laciniata* L. Bernalillo Co.: Albuquerque, University of New Mexico Campus, weed in flower bed near Geology Building, 13 May 1994,

Lowrey 1555 (UC). McKinley Co.: Red Rock State Park, 9 km E of Gallup, T15N, R17W, sect. 11, abundant in campground on deep sandy soil with *Bromus tectorum* and *Hordeum*, elev. 2020 m, 25 May 1994, Sivinski & Lightfoot 2694 (NMC,UNM); Cañon de las Lagunitas, T16N, R5W, in *Bouteloua gracilis*-*Hilaria jamesii* rangeland, elev. 1950-2000 m, 11 June 1994, Peterson 94-84 (UNM). San Miguel Co.: Las Vegas, weed in sidewalk, 29 May 1991, Worthington 20939 (NMC); Pecos National Historical Park, disturbed area behind Trading Post stables at Fork Lightning Ranch, T15N, R12E, sect. 9 SW  $\frac{1}{4}$ , old landfill in piñon-juniper woodland, elev. 2070 m, 14 June 1993, Sivinski & Simpson 2251 (UNM). Santa Fe Co.: near Edgewood, grassland just below level of juniper, May 1987, Townsend s.n. (NMC) [determined by Guy Nesom 1987]; Santa Fe, T17N, R10E, sect. 31, with *Bouteloua gracilis* and *Stipa comata* in *Pinus edulis* woodland, elev. 2150 m, 17 May 1993, Peterson 93-139 (UNM).

Comment: This European species was first reported in North America along the eastern slope of Colorado in the 1950s (Great Plains Flora Assoc. 1986). It has since spread to Kansas and is now a common weed in north and west-central New Mexico. Leaf shape is quite variable and several of the New Mexican collections have narrower leaves than the description in the *Flora of the Great Plains* (Great Plains Flora Assoc. 1986). However, *Flora Europaea* (Tutin et al. 1976) describes this species as extremely variable in leaf shape.

## BORAGINACEAE

*Antiphytum floribundum* (Torr.) A. Gray. Hidalgo Co.: Animas Mts., T32S, R19W, sect. 8 NW  $\frac{1}{4}$ , scattered and uncommon on a steep, S-facing slope of rocky rubble at the base of a rhyolitic cliff with *Quercus arizonica*, *Gymnosperma glutinosum*, and *Dasyilirion wheeleri*, elev. 2050 m, 21 August 1993, Sivinski & Irick 2526 (BRY,MO,NMC,UNM).

Comment: First New Mexico record for the genus and species. This species ranges from the Trans-Pecos region of Texas south through the Sierra Madre Occidentale to central México.

*Heliotropium fruticosum* L. Grant Co.: City of Rocks State Park, T20S, R11W, sect. 4 SE  $\frac{1}{4}$ , abundant in shallow pockets of soil on large outcrops of rhyolitic rock, desert grassland of *Bouteloua eriopoda* and *Yucca elata*, with *Quercus emoryi* and *Juniperus deppeana* growing against the rock faces, elev. 1600 m, 16 October 1993, Sivinski 2616 (BRY,NMC,UNM).

Comment: This annual ranges south to northern South America and east to the West Indies. It is a highly variable species with forms that are short and basally branched with small corollas, or tall and terminally branched with large corollas. The New Mexico collection belongs to the autogamous variant with minute (0.5-1 mm), included corollas and several short, basal branches, which is similar to the form in adjacent, southern Arizona.

## BRASSICACEAE

*Alyssum desertorum* Stapf. McKinley Co.: Red Rock State Park just east of Gallup, growing in campground with *Ranunculus testiculatus*, 5 May 1980, McCallum 699 (UNM); same location on deep, sandy soil, elev. 2040 m, 25 May 1994, Sivinski & Lightfoot 2695 (NMC,UNM).

Comment: This European species is persistent, but not yet common in New Mexico. The first specimen was identified as *Alyssum alyssoides* (L.) L. Nevertheless, its glabrous silicles and early deciduous sepals clearly place it within *A. desertorum*. This species was noted to be not abundant at the time of the second collection.

*Cardaria chalepensis* (L.) Handel-Mazzetti. Bernalillo Co.: Albuquerque, in valley along roadside, 6 May 1951, Clark s.n. (UNM). Sandoval Co.: roadside close to Bernalillo, elev. 1550 m, 8 May 1931, Castetter 4569 (UNM) [annotated by Ronald McGregor 1984].

Comment: This European species has not been recollected in New Mexico for more than forty years. It did occur in central Rio Grande Valley for at least twenty years and may still persist in that location.

## EUPHORBIACEAE

*Euphorbia carunculata* Waterfall. Chaves Co.: Mescalero Sands, North Dunes 56 km east of Roswell, T11S, R31E sect. 6, elev. 1250 m, 13 September 1987, Peterson 87-97 (UNM); Mescalero Sands, North Dunes 56 km east of Roswell and 1.6 km south of US 380, T10S, R30E, sect. 35, elev. 1240 m, prostrate on sand dunes partly anchored by *Quercus havardii*, 29 September 1991, Peterson 91-401 (UNM).

Comment: This annual ranges from Oklahoma south to Chihuahua. It is locally common on sand dunes in this region (Great Plains Flora Assoc. 1986).

## LAMIACEAE

*Salvia pratensis* L. Sandoval Co.: Near entrance to Jemez Falls Campground on Hwy 4, 2 October 1980, Threlkeld s.n. (UNM). Los Alamos/ Sandoval Co.: State Rt. 502 at county line, roadside, several clumps, 10 June 1990, Foxx s.n. (UNM).

Comment: These are the first records in the southwestern United States for this European species. It is an established weed in the Pacific Northwest east of the Cascade crests (Hitchcock & Cronquist 1973). The Fenton Lake, New Mexico collection label documents approximately 50 rosettes persisting for the previous three years. It was found a decade later as a roadside weed

further to the west of the first location. It is, therefore, established in the Jemez Mountains where it appears to be spreading.

## MORACEAE

*Morus alba* L. Bernalillo Co.: Albuquerque, Rio Grande valley at Central Ave. Bridge, common in riparian woodland with *Populus fremontii* and *Ulmus pumila*, elev. 1510 m, 25 May 1994, Sivinski 2696 (NMC,UNM).

Comment: This Asian tree has been cultivated in the Rio Grande valley since at least 1906 (*Wootton s.n.* [NMC]). It is a well known feral tree, but this is apparently the first published record of its naturalization to New Mexico. The native cottonwood riparian forest of the Rio Grande valley through Albuquerque is frequently burned by wildfire. The fire replacement stand consists of *Elaeagnus angustifolia* L., *Ulmus pumila* L., *Morus alba*, and *Tamarix ramosissima* L. This stand of exotic trees is slowly replacing the native cottonwood bosque for several miles along the central portion of the Rio Grande.

## POLEMONIACEAE

*Gilia stellata* Heller. Grant Co.: Gila National Forest, south-facing slopes above Middle Box of the Gila River, T18S, R18W, sect. 13, occasional in desert scrub dominated by *Mimosa biuncifera*, elev. 1360 m, 16 March 1983, Peterson 83-9 (UNM).

Comments: This species was previously known from the Mohave and Colorado Deserts. The southwestern New Mexico collection represents a significant eastward range extension from central Arizona.

## RUBIACEAE

*Galium bifolium* S. Watson. San Juan Co.: Lukachukai Mts. (Chuska Mts.), 1 June 1950, Clark 15313 (UNM).

Comment: This species ranges from British Columbia to northwestern New Mexico and was included in the *Flora of New Mexico* (Martin & Hutchins 1981) as a single occurrence in Sandoval County. The *Flora* record, however, was based upon a misidentified specimen. The San Juan County collection correctly places this species in New Mexico.

*Kelloggia galioides* Torr. San Juan Co.: Lukachukai Mts., on old logging spur Navajo Forestry Road 7051I, 36°23'15" 109°02'45", ponderosa pine zone, white, sandy soil, elev. 2570 m, 22 June 1989, Hevron 184 (UNM).

Comments: First New Mexico record for the genus and species, which ranges from Idaho to northwestern New Mexico. The Lukachukai Mts. straddle the NM/AZ border and are often called the Chuska Mts. The presence of

this species and *Galium bifolium* represent an element of a more northwestern flora in this mountain range.

## VIOLACEAE

*Viola nuttallii* Pursh. Colfax Co.: Above Sugarite Canyon in what is now Sugarite Canyon State Park, west of Lake Maloya near Segerstrom Creek, T32N, R24E, with grasses and forbs near *Pinus ponderosa* and *Quercus gambelii*, elev. 2340 m, 11 June 1984, *Peterson 84-239* (UNM). San Juan Co.: Mesa east of Los Pinos arm of Navajo Lake, T32N R7W, sect. 17, on sandy clay soil with *Artemisia tridentata* and *Pinus edulis*, elev. 1950 m, 9 May 1991, *Sivinski 1659* (NMC, UNM).

Comment: Martin & Hutchins (1981) included this species in *A Flora of New Mexico*, but with no certain records. These collections document the species for the state.

## ACKNOWLEDGMENTS

This study was partially supported by a grant from the National Park Service, Pecos National Historical Park. Publication costs were paid by the New Mexico Energy, Minerals and Natural Resources Department, Forestry and Resources Conservation Division. The authors appreciate the manuscript review and comments of Richard Spellenberg and Kelly Allred. We also thank Helen Cannon and Bill Hevron for permission to publish their collection records, and John Strother (UC) for confirming our identifications of *Scorzonera laciniata*.

## LITERATURE CITED

- Correll, D.S. & M.C. Johnston. 1970. *Manual of the Vascular Plants of Texas*. Texas Research Foundation, Renner, Texas.
- Great Plains Flora Assoc. 1986. *Flora of the Great Plains*. University Press of Kansas. Lawrence, Kansas
- Hitchcock, C.L. & A. Cronquist. 1973. *Flora of the Pacific Northwest*. University of Washington Press. Seattle, Washington.
- Martin, W.C. & C.R. Hutchins. 1980, 1981 (vols. 1 & 2 respectively). *A Flora of New Mexico*. J. Cramer, Vaduz, Liechtenstein.

- Spellenberg, R., L. McIntosh, L. Brouillet. 1993. New records of angiosperms from southern New Mexico. *Phytologia* 75:224-230.
- Tutin, T.G., V.H. Heywood, N.A. Burges, D.M. Moore, D.H. Valentine, S.M. Walters, D.A. Webb. 1976. *Flora Europaea*. Vol. 4, Cambridge University Press, Cambridge, Great Britain.